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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,152	02/25/2002	Chi-Hoon Choi	11036-004-999	1288
24341	7590	07/22/2004	EXAMINER	
MORGAN, LEWIS & BOCKIUS, LLP.			YOON, TAE H	
3300 HILLVIEW AVENUE			ART UNIT	
PALO ALTO, CA 94304			PAPER NUMBER	

1714

DATE MAILED: 07/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/085,152	CHOI ET AL.	
	Examiner	Art Unit	
	Tae H Yoon	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 1-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Applicant's election of Group II, claims 14-20 in the reply filed on June 25, 2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

The recited specific gravity having a unit of g/cc throughout the specification is objected since said specific gravity does not have any units, and the specific gravity is numerically equal to density for solids and liquids. See attached copy of the pages 1038-1039 of the Hawley's Condensed Chemical Dictionary, 1997.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 14-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recited "type" in "fiber-type" of claims 14, 18, 19 and 20 is indefinite and cancellation is suggested. The recited "iso-based resin, ortho-based resin and tere-based resin" of claim 15 is indefinite absent further limitation with respect to said iso-, ortho- and tere-. The recited "the saturated crystalline" in line 4 of claim 15 lacks an antecedent basis, and the recited specific gravity having a unit of g/cc in lines 9-10 of claim 15 is incorrect. The recited bulk density in claims 16-18 and 20 is indefinite absent a particular unit. The recited "The method of claim 19" in claim 20 lacks an

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antecedent basis since claim 19 is directed to a sheet molding compound, not to a method.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14 -20 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 083 837 and Shibata et al (US 5,246,983), and further in view of Rowe (US 4,101,604).

EP teaches a reinforced unsaturated polyester composition and an article such as a sheet molding thereof in example 2 and claims. Said example 2 comprises 18 wt.% of unsaturated polyester, 8.4 wt.% of crystalline resin, 3.6 wt.% of styrene, 42 wt.% of calcium carbonate, 1.5 wt.% of zinc stearate, 0.3 wt.% of peroxide and 25 wt.% of chopped glass roving. Crystalline resin of said example 2 is taught as unsaturated crystalline polyester at page 3, lines 14-30. The use of other thermoplastics such as acrylic copolymers or polystyrene or saturated polyesters yielding reduced shrinkage is also taught at page 5, lines 7-10.

The instant invention further recites hollow glass spheres having a specific gravity of less than about 1.5 and bulk density of the reacted composition over EP. However, the use of hollow glass spheres in unsaturated polyester compositions in order to reduce the weight or specific gravity is well known as taught by Rowe (col. 4,

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lines 23-24) and Shibata et al (col. 1, lines 27-31 and col. 2, lines 59-68). Also, hollow glass spheres having the instant specific gravity are well known as taught by Rowe, col. 4, lines 24-26. Hollow glass spheres having a density of less than 0.7 g/cc would have a specific gravity of 0.7. Shibata et al teach the specific gravity (and thus density) of molded panel in table 1, examples 1-6.

Thus, it would have been obvious to one of ordinary skill in the art at the time of invention to utilize the art well known hollow glass spheres of Rowe and Shibata et al in EP in order to obtain a car panel having reduce weight since EP teaches BMCs and SMCs and a car panel obtained from said BMCs and SMCs of unsaturated polyester compositions is a routine in the art and since automobile industries are working to reduce weight of a car which would increase a fuel efficiency, and the use of glass fibers with a length less than 10 mm is a *prima facie* obviousness since EP teaches chopped glass fibers and since the instant preambles, car panel and a sheet molding compound, has little probative value absent particular dimensions and/ or shape. With respect to the bulk density of claim 17, it would be an obvious design choice to one skilled in the art since Shibata et al various bulk densities.

Claims 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata et al (US 5,246,983) in view of Rowe (US 4,101,604).

Shibata et al teach a reinforced unsaturated polyester composition and an article thereof at col. 1, lines 27-31 and in examples 1-6 of table 1. Shibata et al teach also employing saturated polyesters as low profile agents at col. 3, lines 47-58, and choosing

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crystalline saturated polyesters would be 50 % possibility since there are two different morphologies, crystalline and amorphous.

The instant invention further recites a specific gravity of hollow spheres and amounts of components being a little different from those taught by Shibata et al. However, Shibata et al teach various modifications at cols. 4 and 5, and Rowe (col. 4, lines 23-24) teach the instant specific gravity.

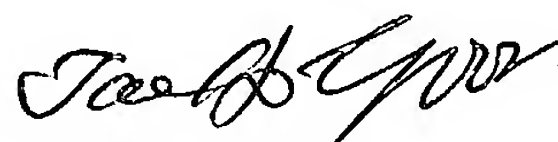
Thus, it would have been obvious to one of ordinary skill in the art at the time of invention to utilize a crystalline saturated polyester as a low profile agent and modify the amounts of components in Shibata et al since Shibata et al teach various modifications and since choosing a crystalline saturated polyester from the disclosed saturated polyesters would a *prima facie* obviousness, and the instant specific gravity of hollow spheres is well known as taught by Rowe.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tae H Yoon whose telephone number is (571) 272-1128. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tae H Yoon
Primary Examiner
Art Unit 1714

THY/July 19, 2004